

## Artificial Reef

We refer to the article "Adopt a reef, and save the coral" dated 28 June, 2005 in the Strait Times. We like to highlight that artificial reef is not a substitute for a natural coral reef. It would be more prudent to leave natural coral reef untouched if possible.

Artificial reef is often mistaken for quick-fix solution to restore coral reef in areas where corals had been degraded or totally destroyed. Unlike instant trees these artificial reef balls made either of concrete or fibreglass have to wait many years for scattered bits of corals to attach & grow on the bare surfaces. There is simply no comparison between a 2 decade old artificial reef and a natural coral reef in term of the biodiversity and coral growth.

Here in our local water, coral reefs are found growing normally at depths sloping from 3 to 10 meters. Deeper than 10 meters coral cover thin out due to lack of sunlight in our normally less-than-clear water. For proper conservation & to maintain coral reefs in their natural state we should avoid planting artificial reef balls in areas with existing live corals. Degraded coral reefs must also be allowed to recover naturally.

Singapore has already suffered a massive 65% lost of local coral reefs. The remaining reefs are found in the southern islands of the Singapore Straits, either fringing the islands or existing as patch reefs. Patch reefs are often exposed partially during extreme low tides. The primary cause for this extensive loss is through coastal development, where the coastline and the sea space have been reclaimed and modified. This loss is further aggravated by the impact of sedimentation from reclamation, dredging and shipping activities.

The most obvious loss of coral reef comes from the complete physical destruction of reef habitats by direct burying them under tons of sand and dredged material from coastal reclamation.

Dredging the seabed destroys sensitive ecosystems to the point where recovery is near impossible. Whole benthic communities at the bottom of the sea are wiped out by repeated dredging. The pelagic species that depend on this habitat will naturally move elsewhere. The result is poor fishing in Singapore waters as often lamented by local anglers.

The heavy sedimentation created by dredging and uncontrolled deposits of dredged material also smother reef habitats located further away with silt. This is especially so when dredging vessels discharge dredged material by water jets or simply dumping it into the sea from a bottom hatch without a silt screen in place to confine the spread of sedimentation. Tidal currents can carry the silt runoff from these sites over to adjacent coral reefs.

Sedimentation clouds the water and reduces the amount of sunlight that can penetrate it. This in turn stuns the growth of coral, which needs sunlight for photosynthesis. Fine sediment settling on coral reef puts another stress on coral organisms, causing them to secrete a film of mucous to 'cleanse' themselves of silt. Energy expended by this would otherwise be used in growth.

Unless our sea water condition improves, no amount of artificial reefs would help in bringing back the once thriving coral reef we have in our southern islands.

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